

## Montana Board of Oil and Gas Conservation Environmental Assessment

**Operator:** Chaparral Energy, LLC  
**Well Name/Number:** McVay 3-34H  
**Location:** SW SW Section 27 T25 R55E  
**County:** Richland, MT; **Field (or Wildcat)** Wildcat

### Air Quality

(possible concerns)

Long drilling time: No, 25-35 days drilling time.

Unusually deep drilling (high horsepower rig): Triple derrick rig 1000 HP, Bakken horizontal TVD 9,967'/MD 14,449'.

Possible H<sub>2</sub>S gas production: Slight

In/near Class I air quality area: No Class I air quality area.

Air quality permit for flaring/venting (if productive): Yes, DEQ air quality permit required under 75-2-211.

Mitigation:

☒ Air quality permit (AQB review)

☒ Gas plants/pipelines available for sour gas

☐ Special equipment/procedures requirements

☐ Other: \_\_\_\_\_

Comments: Existing pipeline for gas in the area.

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### Water Quality

(possible concerns)

Salt/oil based mud: Yes to intermediate string casing, invert, oil based drilling fluids. Horizontal lateral to be drilled with brine water. Surface casing hole to be drilled with freshwater and freshwater mud.

High water table: No high water table anticipated.

Surface drainage leads to live water: Yes, nearest drainage is an unnamed ephemeral tributary drainage to East Charlie Creek, about 3/8 of a mile to the south of this location.

Water well contamination: No, closest water well is about 3/4 of a mile to the southwest of this location.

Depth of this water well is 300'. All other water wells are over 1 mile distance from this well. Surface hole will be drilled with freshwater. Surface casing will be set to 1800' and cemented to surface.

Porous/permeable soils No, sandy silty clay soils.

Class I stream drainage No, Class I stream drainages.

Mitigation:

☒ Lined reserve pit

☒ Adequate surface casing

☐ Berms/dykes, re-routed drainage

☐ Closed mud system

☐ Off-site disposal of solids/liquids (in approved facility)

☐ Other: \_\_\_\_\_

Comments: 1800'+/- surface casing well below freshwater zones in adjacent water wells. Also, covering Fox Hills aquifer. Adequate surface casing and BOP equipment to prevent any problems.

### Soils/Vegetation/Land Use

(possible concerns)

Stream crossings: No stream crossings anticipated.

High erosion potential: No, location has a moderate cut of 12.9' and a moderate fill of 7.4', required.

Loss of soil productivity: None, location to be restored after drilling well, if well is nonproductive. If well is productive, unused portion of drillsite will be reclaimed.

Unusually large wellsite: No, large well site 330' X 270'.

Damage to improvements: Slight, surface use appears grassland.

Conflict with existing land use/values: Slight

Mitigation

☐ Avoid improvements (topographic tolerance)

☐ Exception location requested

☒ Stockpile topsoil

☐ Stream Crossing Permit (other agency review)

☒ Reclaim unused part of wellsite if productive

☐ Special construction methods to enhance reclamation

☒ Other: Requires DEQ General Permit for Storm Water Discharge Associated with Construction Activity, under ARM 17.30.1102(28).

Comments: Oil based muds will be recycled, cuttings will be disposed of in a lined reserve pit, completion fluids will be hauled to Class II disposal. Pit will be allowed to dry, fly ash pit contents and backfilled with subsoil. Access will be over existing county roads #330 and an access road of about 2678' will be built into this location from the existing county road.

### Health Hazards/Noise

(possible concerns)

Proximity to public facilities/residences : No residences within 1 mile in any direction from this location.

Possibility of H2S: Slight

Size of rig/length of drilling time: Triple drilling rig 25 to 35 days drilling time.

Mitigation:

☒ Proper BOP equipment

☐ Topographic sound barriers

☐ H2S contingency and/or evacuation plan

☐ Special equipment/procedures requirements

☐ Other: \_\_\_\_\_

Comments: 1800' is adequate surface casing cemented to surface with working BOP stack should mitigate any problems. Distance sufficient to mitigate noise.

### Wildlife/recreation

(possible concerns)

Proximity to sensitive wildlife areas (DFWP identified): None identified.

Proximity to recreation sites: None identified.

Creation of new access to wildlife habitat: None identified.

Conflict with game range/refuge management: No

Threatened or endangered Species: Species identified as threatened by the USFWS are Pallid Sturgeon, Piping Plover, Interior Lease Tern and Whooping Crane in Richland County.

Mitigation:

☐ Avoidance (topographic tolerance/exception)

☐ Other agency review (DFWP, federal agencies, DSL)

☐ Screening/fencing of pits, drillsite

☐ Other: \_\_\_\_\_

Comments: Private surface grasslands. No concerns.

### Historical/Cultural/Paleontological

(possible concerns)

Proximity to known sites: None identified.

Mitigation

avoidance (topographic tolerance, location exception)

other agency review (SHPO, DSL, federal agencies)

Other:

Comments: Private surface grasslands. No concerns.

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### Social/Economic

(possible concerns)

Substantial effect on tax base

Create demand for new governmental services

Population increase or relocation

Comments: No concerns.

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### Remarks or Special Concerns for this site

A single lateral horizontal Bakken formation well in this spacing unit.

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### Summary: Evaluation of Impacts and Cumulative effects

TVD 9,967'/MD 14,449' Bakken Formation horizontal well. No long term impacts expected. Some short term impacts will occur.

I conclude that the approval of the subject Notice of Intent to Drill (does/**does not**) constitute a major action of state government significantly affecting the quality of the human environment, and (does/**does not**) require the preparation of an environmental impact statement.

Prepared by (BOGC): \s\Steven Sasaki

(title:) Chief Field Inspector

Date: June 19, 2010

Other Persons Contacted:

Montana Bureau of Mines and Geology, Groundwater Information Center website

(Name and Agency)

Richland County water wells

(subject discussed)

May 26, 2010

(date)

USFWS Threatened, Endangered, Proposed and Candidate Species Montana Counties website, Richland County

(Name and Agency)

Threatened or Endangered Endanger species

(subject discussed)

May 26, 2010

(date)

If location was inspected before permit approval:

Inspection date: \_\_\_\_\_

Inspector: \_\_\_\_\_

Others present during inspection: \_\_\_\_\_